**3.3 First Derivative Test for Increasing/Decreasing**

**For the following:**

1. **Identify all critical numbers**
2. **Find the open intervals where the function is increasing and decreasing**
3. **Locate all extrema**
5. The profit (P) that a local fast food restaurant takes in by selling (h) hamburgers can be modeled by the function , assuming they can’t sell more than 35,000 hamburgers each month. Make a recommendation to the manager for the number of hamburgers he needs to sell. In your recommendation, give the manager the amount of hamburgers that make profit increase/decrease.
6. If the graph of a function is quadratic, what will the graph of its derivative look like?
7. If the graph of a function is a linear function with a positive slope, draw a graph of its derivative.
8. If the graph of a derivative is a parabola that opens up, how many max/min will the graph of the function have?